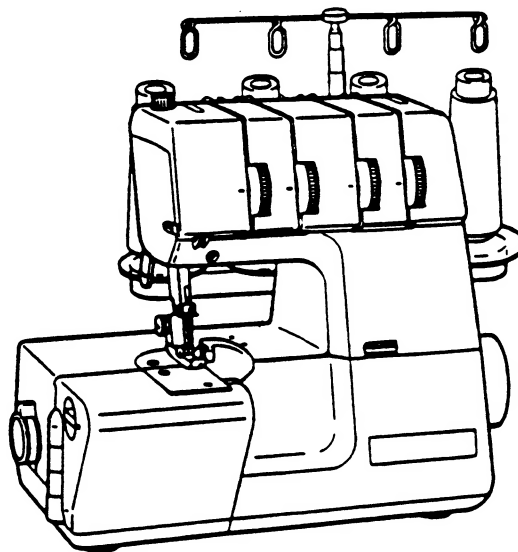


# SERVICE MANUAL



**MODEL    SUPER LOCK 734DW**

**ORIGINAL ISSUE AUGUST, 1991**

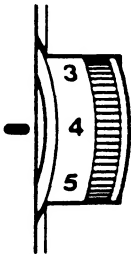
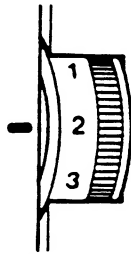
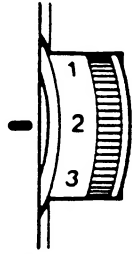
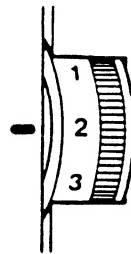
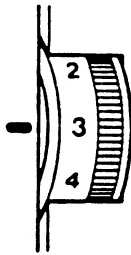
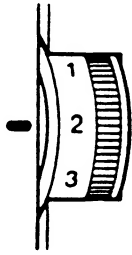
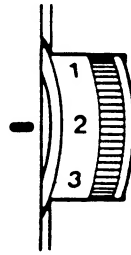
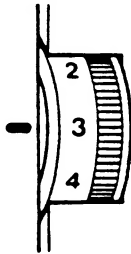
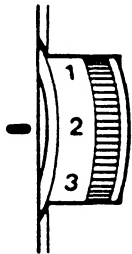
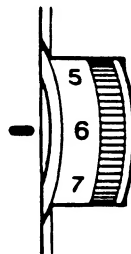
# **WHITE**

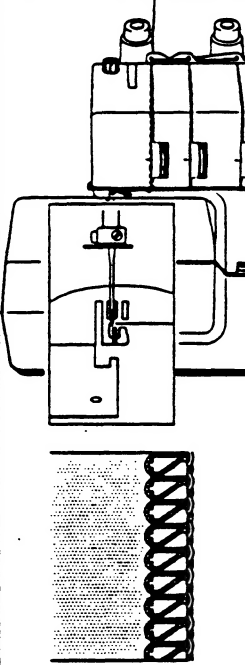
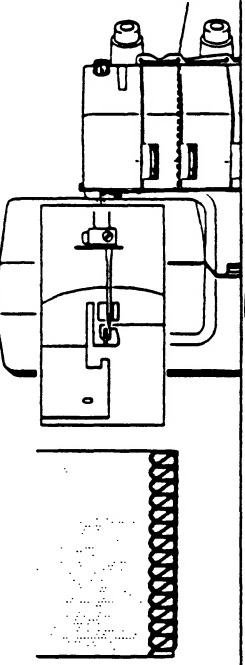
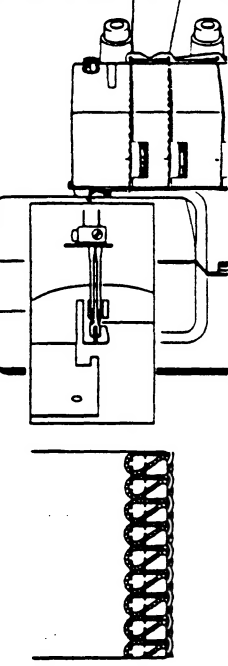


## ADJUSTING THREAD TENSIONS

Proper balance of thread tensions vary depending on type and thickness of the fabric and threads.

First restore all the tension controls to "0", and re-set them as illustrated below, as starting guide for further fine adjustments.

Thread Stitches	Needle Thread		Upper looper Thread	Lower Looper Thread
	Left Needle	Right Needle		
General Lock Stitches				
Narrow Hemming				
Rolled Hemming				

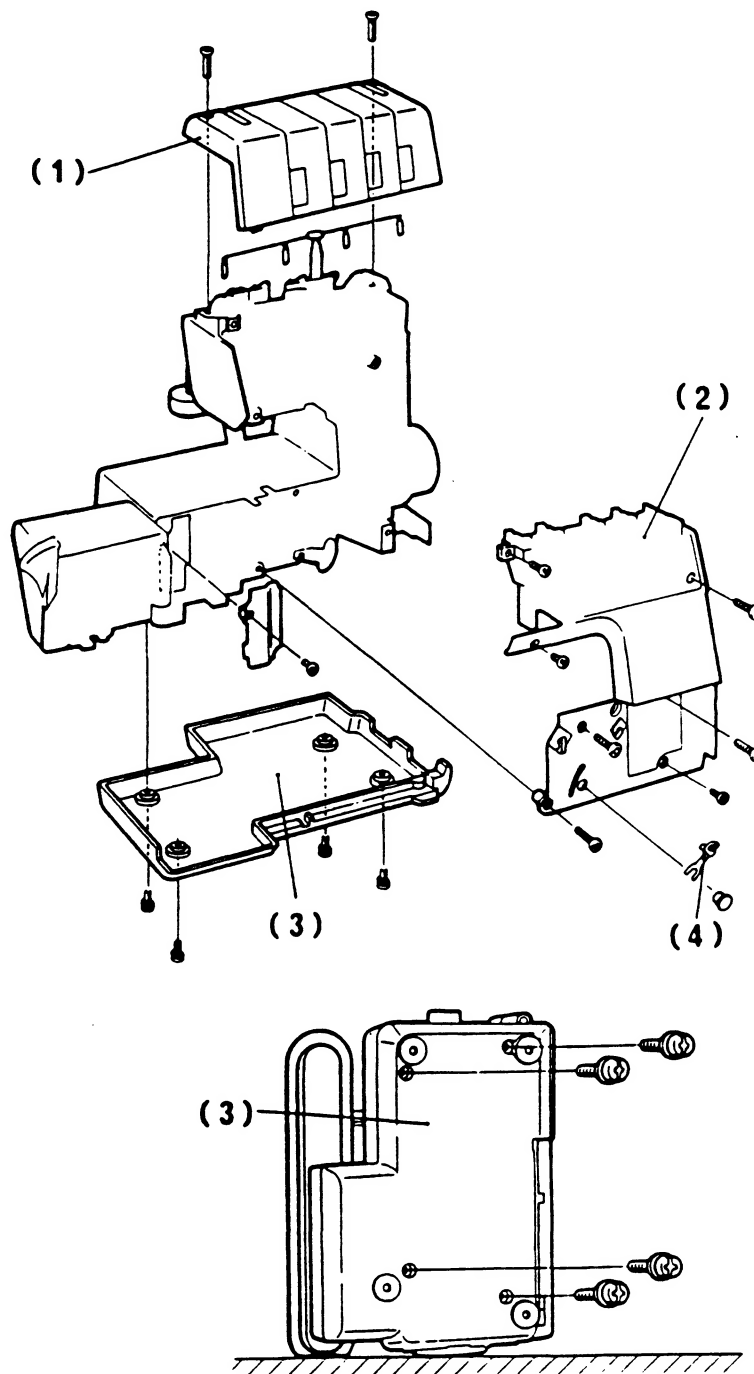
Number of threads	3 Threads		4 Threads (described previously)	
Overedge width	5 mm	2.8 mm	5 mm	
Needle(s)	Use left needle only	Right needle only	Two needles	
Needle thread tension control(s)	3	2	3	2
				

## DISASSEMBLING / ASSEMBLING OF COVERS

To disassemble covers from machine body, take out; 2 screws from Top Cover; 7 screws from Front Cover, as illustrated.

To remove base Cover, turn up machine to stand on its side, and take out 4 screws as shown.

Thread guides (4) have to be removed before front cover (2) is disassembled.

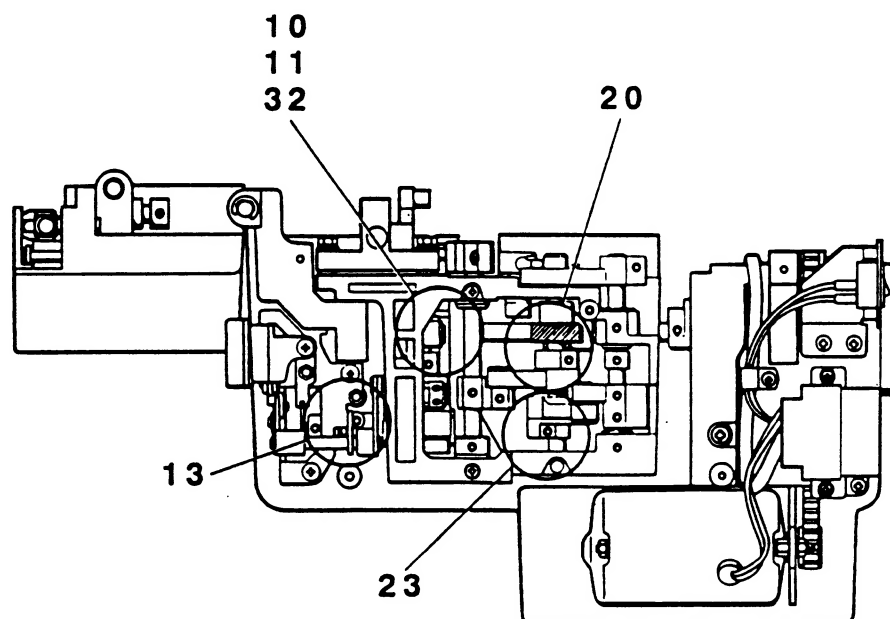
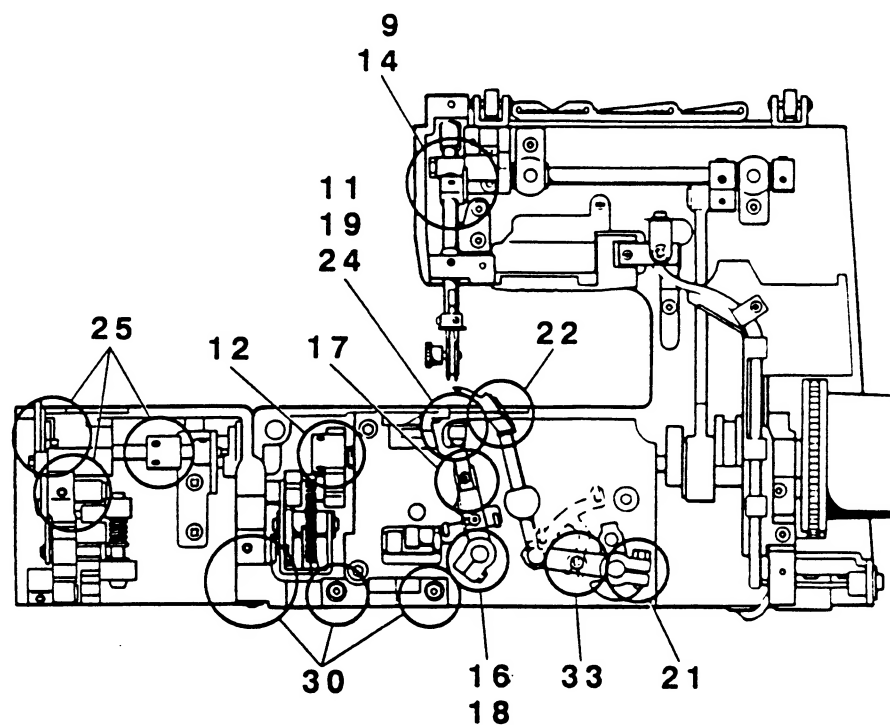


**VARIOUS ADJUSTMENTS**

Page	7	Timing gauge
	8	Procedures to check timing of needle and loopers
	9	Presser foot height
	10	Feed dog height
	11	Feed dog timing - vertical motion
	12	Feed dog timing - lateral Movement
	13	Feed dog timing - clearance to needle plate hole
	14	Needle height
	15	Position of upper thread guide
	16	Needle distance to lower looper point
	17	Lower looper height
	18	Needle clearance to lower looper
	19	Needle guard position
	20	Needle and lower looper timing
	21	Needle distance to upper looper point
	22	Clearance between upper and lower loopers
	23	Upper looper timing
	24	Upper cutter timing
	25	Replacing cutters
	26	Replacement of cutters cont'd
	27	Replacement of cutters cont'd
	28	Replacement of cutters cont'd
	29	Replacement of cutters cont'd
	30	Positioning of cutting unit
	31	Positioning of cutting unit cont'd
	32	Clearance between front feed dog and rear feed dog
	33	Oscillating thread guide position
	34	Adjustment of thread tension regulators
	35	Wiring to terminal block

\*\*\* Always use "HA × 1PS" #14 needle for adjustments. \*\*\*  
(Sharp point)

# ADJUSTMENT AREAS

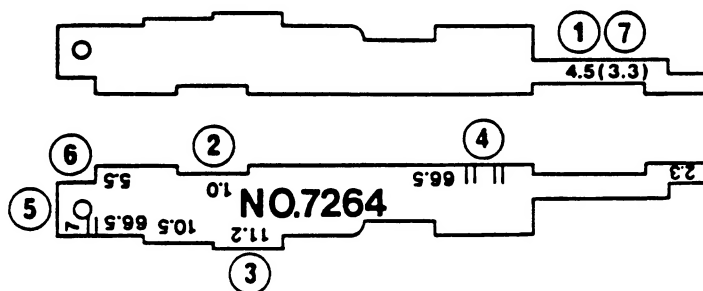


## TIMING GAUGE

This is a multi-gauge to be utilized to check machine timing, or dimensions of, or clearances between relative parts at designated conditions.

Follow instructions in corresponding sections.

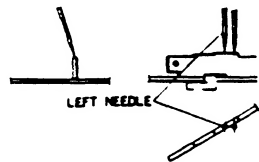
Check Points	Standard Dimension	
1 Presser foot height	4.5	
2 Feed dog height	1.0	
3 Needle height	11.2	
4 Lower looper height	66.5	
5 Needle distance to Lower Looper Point	7.0	
6 Needle distance to Upper Looper Point	5.5	
7 Clearance between front feed dog and rear feed dog	3.3	



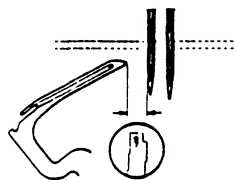


## PROCEDURES TO CHECK TIMING OF NEEDLE AND LOOPERS

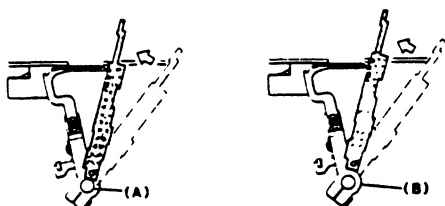
### STEP 1 Needle height



### STEP 2 Needle distance to lower looper point

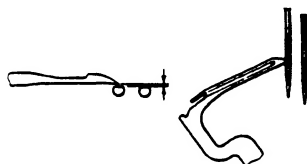


### STEP 3 Lower looper height



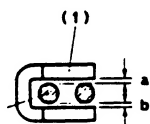
### STEP 4 Repeat Step 2.

### STEP 5 Needle clearance to lower looper



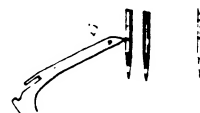
### STEP 6 Repeat Step 2.

### STEP 7 Needle Guard position

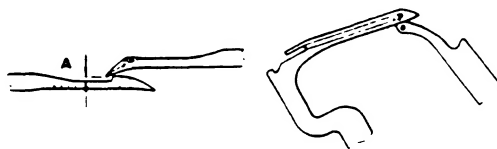


### STEP 8 Repeat Step 5.

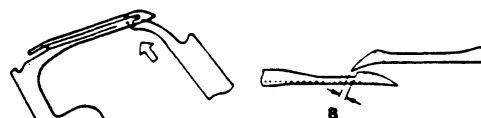
### STEP 9 Needle and lower looper timing



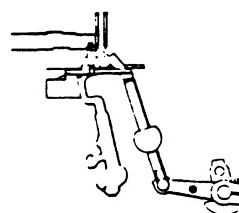
### STEP 10 Clearance between upper/lower loopers



### STEP 11 Upper looper timing

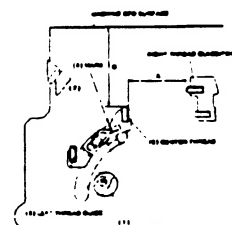


### STEP 12 Needle distance to upper looper point



### STEP 13 Repeat Step 10.

### STEP 14 Oscillating thread guide position



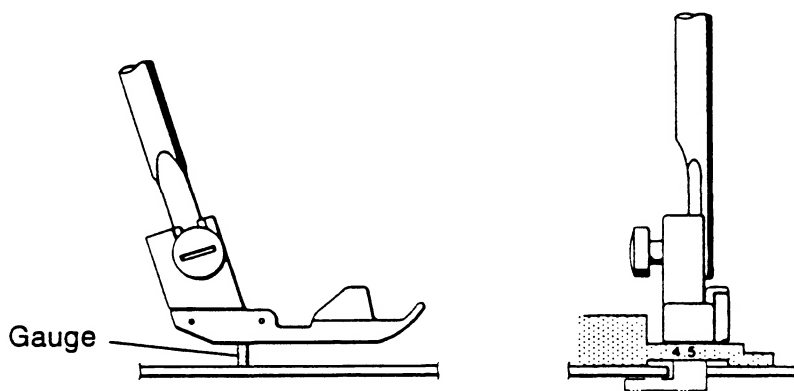
### STEP 15 Sewing test

## PRESSER FOOT HEIGHT

### Checking:

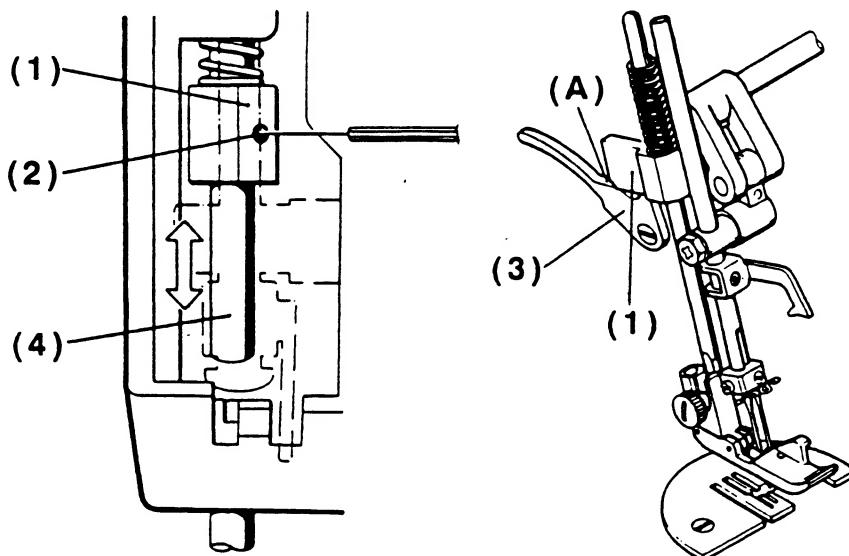
1. Increase pressure and raise presser foot.
2. Using part ① 4.5 of multi-gauge, check clearance between needle plate and presser foot.

Standard dimension: 4.5 mm



### Adjustment:

1. Remove top cover, front cover and D.T. unit.
2. Under checking condition, loosen screw (2) on the presser bar holder (1).
3. Adjust presser bar (4) height with holder (1) resting on the shoulder (A) of release lever (3).
4. After adjustment, check presser foot direction and tighten screw (2).

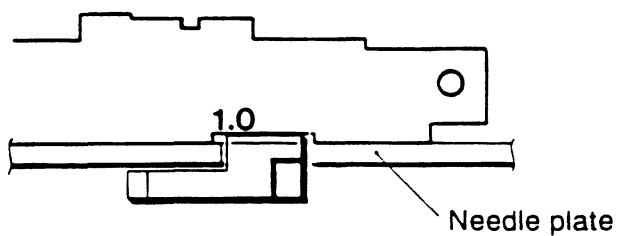


## FEED DOG HEIGHT

### Checking:

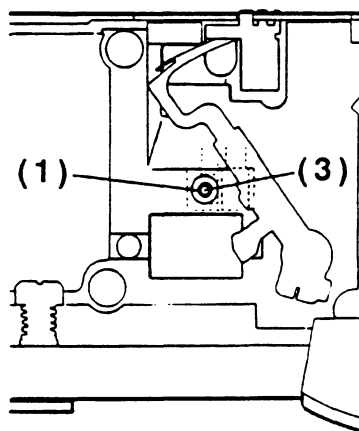
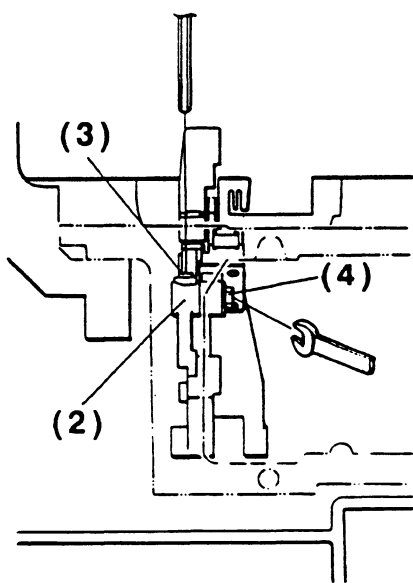
1. Remove presser foot.
2. Turning hand wheel manually, bring up feed dogs at the highest position.
3. Using part ② 1.0 of multi-gauge, check feed dog height from needle plate surface.

**Standard dimension:** 1.0 mm



### Adjustment:

1. Remove base cover.
2. Loosen screw (3) on feed arm (2), through the base access hole (1).
3. Adjust front feed dog height by turning hexagonal head pin (4).
4. Tighten screw (3) after adjustment.



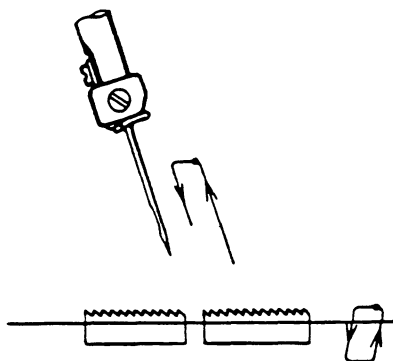
## FEED DOG TIMING

Feed dog timing should be checked in the sequence of its vertical motion, lateral movement, and clearance to the needle plate hole, in this order.

### Vertical Motion:

#### Checking:

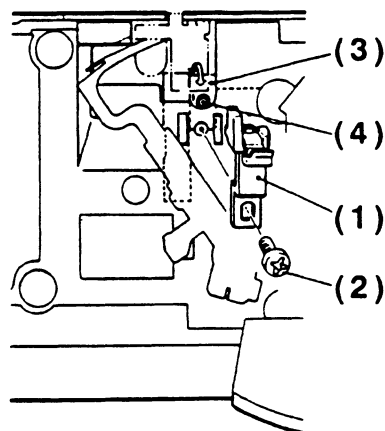
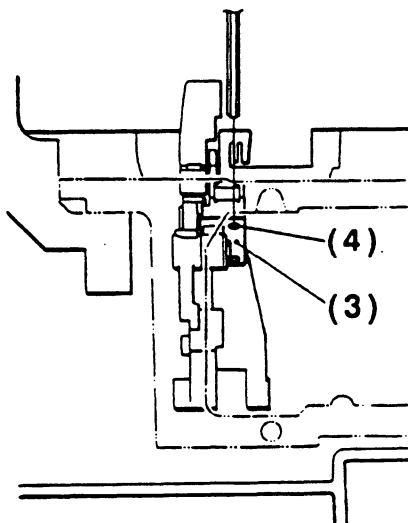
1. Set feed stroke at minimum.
2. Turning hand wheel manually, check and see if feed dog comes up to its highest point simultaneously when needle attains to its highest position.



#### Adjustment:

1. Remove needle guard bracket (1).
2. Loosen 2 screws (4) on eccentric feed cam (3).
3. Adjust set angle of feed cam (3) on the shaft.
4. Tighten 2 screws (4) after adjustment.

\*\*\* After adjustment, check needle guard position.

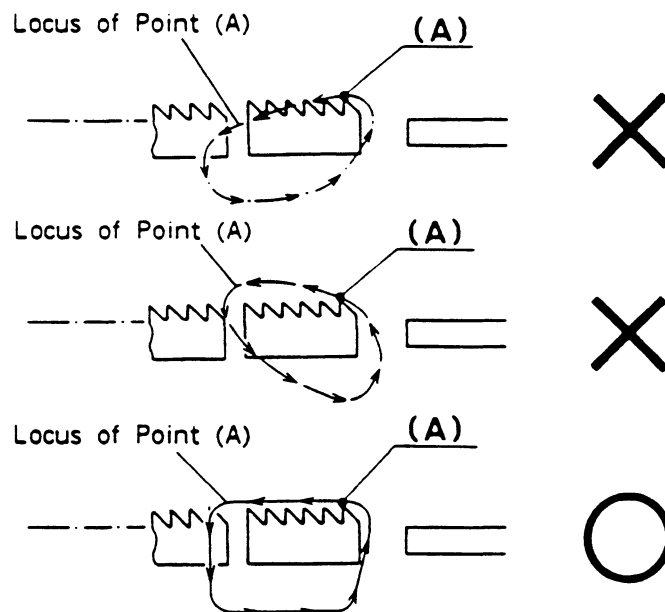


## FEED DOG TIMING CONT'D

### Lateral Movement:

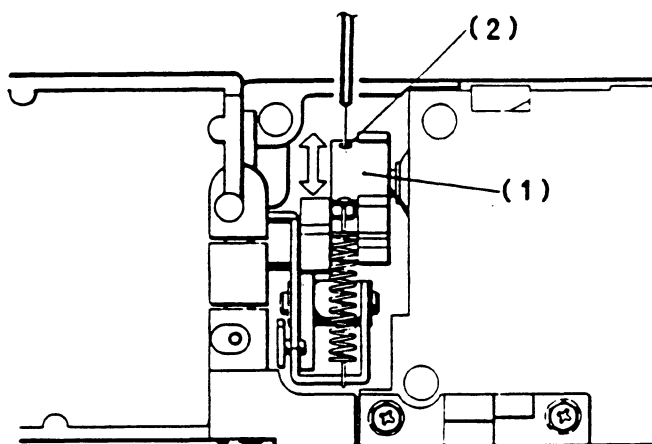
#### Checking:

1. Set feed stroke at maximum.
2. Turning hand wheel manually, check and see if lateral movement of feed dog is parallel to the needle plate surface.



### Adjustment:

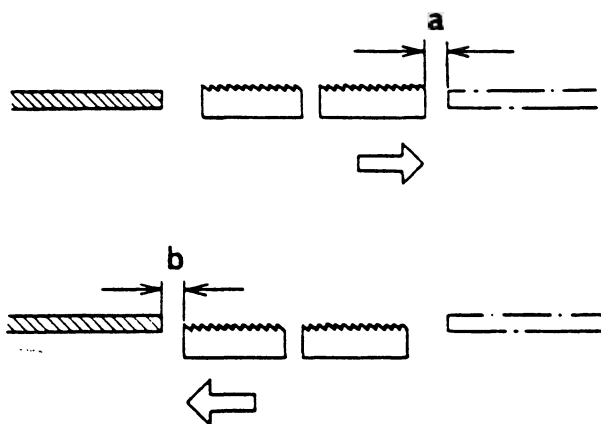
1. Remove base cover.
2. Loosen 2 screws (2) on lateral feed cam (1).
3. Adjust set angle of cam (1) to obtain correct movement of feed dog.
4. Tighten 2 screws (2) after adjustment.



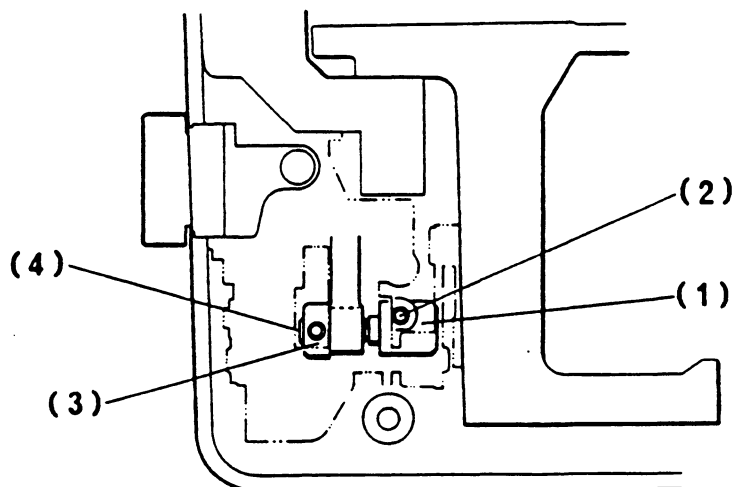
**FEED DOG TIMING CONT'D****Clearance to Needle Plate Hole:****Checking:**

1. Set feed stroke at maximum.
2. Turning hand wheel manually, check and see if feed dog keeps same clearance to needle plate hole at front and rear end.

**Standard :**  $a \approx b$

**Adjustment:**

1. Remove base cover.
2. Loosen screw (2) on feed link (1).
3. Turning eccentric pin (4) at collar (3), adjust position of feed dog correctly.
4. Tighten screw (2) after adjustment.



## NEEDLE HEIGHT

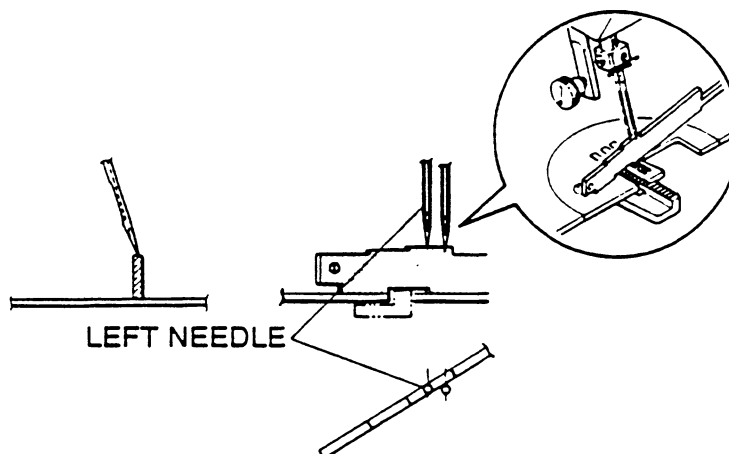
\* The checking must be carried out on the left needle.

### Checking:

1. Remove presser foot.
2. Set needle (#14 "HA × 1SP") correctly in position.
3. Turning hand wheel, bring up needle at highest point.
4. Check height of left needle point from needle plate surface with part ③ 11.2 of multi-gauge.

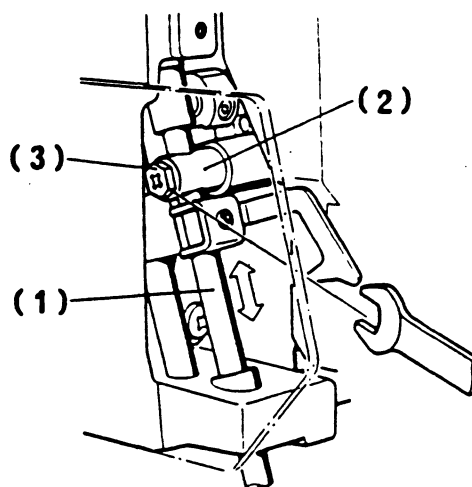
**Standard dimension:** 11.2 mm

\* Apply the gauge slantwise as illustrated so as not to be obstructed by the right needle.



### Adjustment:

1. Remove front cover.
2. Set needle bar (1) at its highest position.
3. Loosen screw (3) on needle bar clamp (2), and adjust needle bar height to the standard dimension.
4. Tighten screw (3) after adjustment.
5. Check upper thread guide position (See next page.).



## NEEDLE HEIGHT CONT'D

### Position of Upper Thread Guide:

#### Checking:

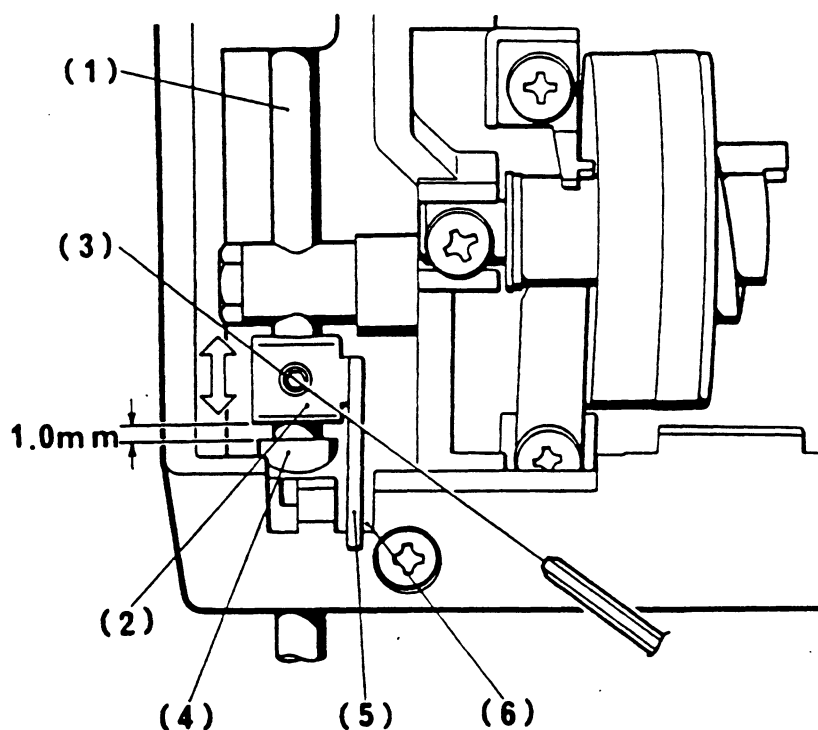
1. Set needle bar (1) at its lowest position while adjusting needle height.
2. Observe clearance between upper thread guide (2) and bush (4) on the base.

Standard dimension: 1.0 mm

See illustration below.

#### Adjustment:

1. Under checking condition, loosen screw (3) on upper thread guide.
2. Adjust position of upper thread guide (2) and tighten screw (3), in the way that finger tip (5) of thread guide comes to the center of base cutout (6).



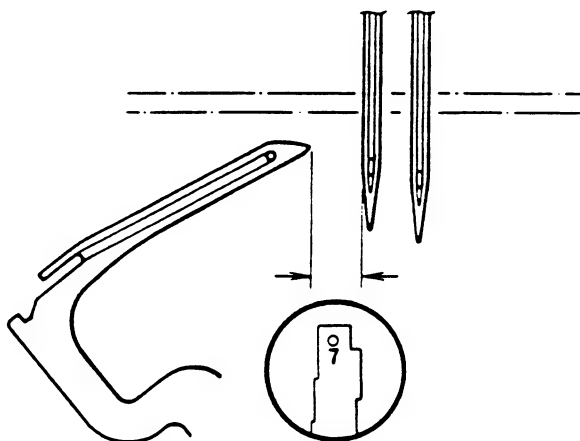


## NEEDLE DISTANCE TO LOWER LOOPER POINT

### Checking:

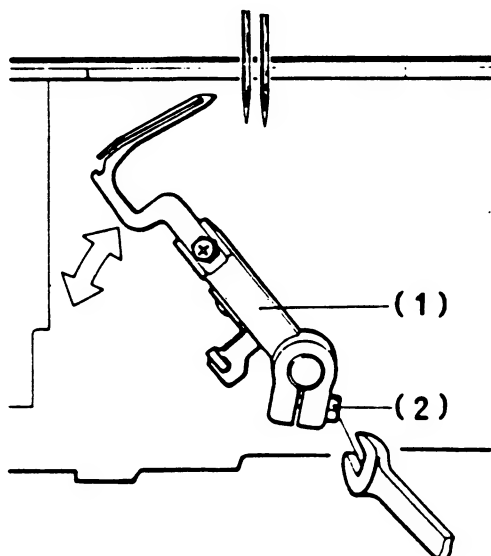
1. Remove presser foot and needle plate.
2. Turning hand wheel, move lower looper to its extreme left end position.
3. Check needle distance to lower looper point by using part ⑤ 7 of multi-gauge.

Standard dimension: 7.0 mm



### Adjustment:

1. Under checking condition, loosen bolt (2) on lower looper support arm (1).
2. Adjust set angle of support arm (1) to obtain standard dimension, keeping its axlewise position on shaft.
3. Tighten bolt (2) after adjustment.



## LOWER LOOPER HEIGHT

Lower looper height is distance from the center of the shaft (A) to the tip of the lower looper.

### Checking:

1. Using part ④ 66.5 of multi-gauge 7264.

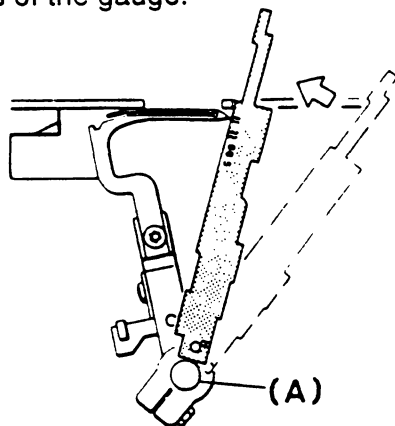
**Standard dimension:**  $66.5 \text{ mm } \begin{smallmatrix} +0.5 \\ -0 \end{smallmatrix}$

- \* Place the gauge on the shaft (A) -dia. 8.0 mm- or lower looper supporting arm (B) and apply it to the tip of the lower looper as illustrated.

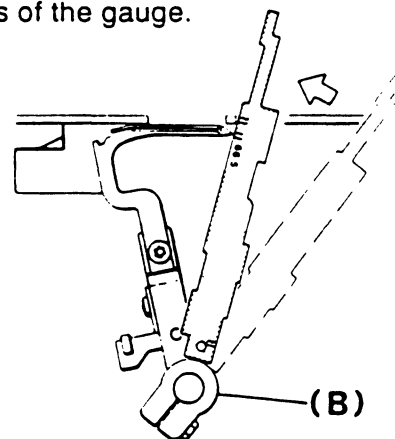
Check to see if the tip of the lower looper coincides with the area between two scales.

### Adjustment:

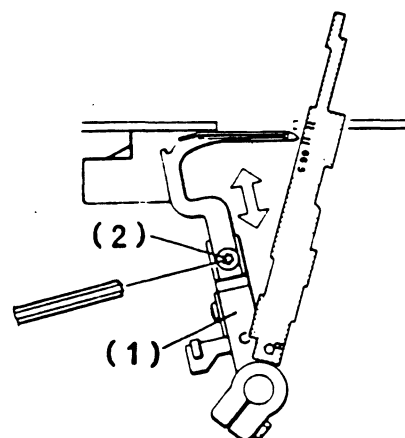
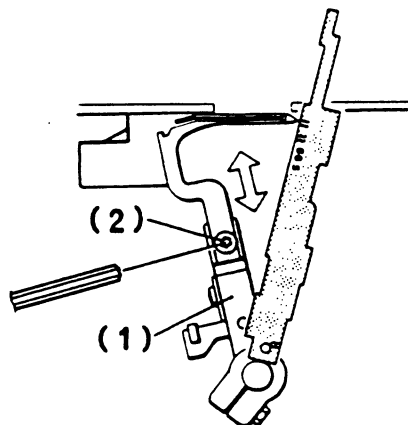
Read the upper two scales of the gauge.



Read the upper two scales of the gauge.



1. Under the checking condition, loosen the screw (2) on looper support arm (1).
2. Adjust vertical position of lower looper.
3. Tighten screw (2) after adjustment.

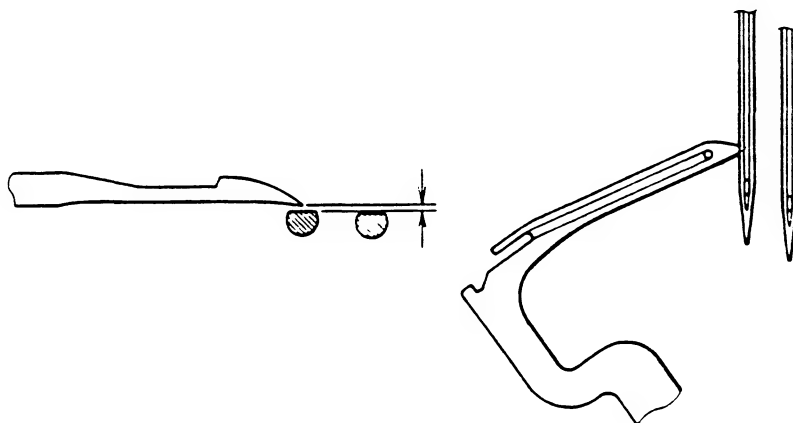


## NEEDLE CLEARANCE TO LOWER LOOPER

### Checking:

1. Remove presser foot and needle plate.
2. Turning hand wheel, move lower looper point to come to the center line of the needle, and check clearance between needle and lower looper.

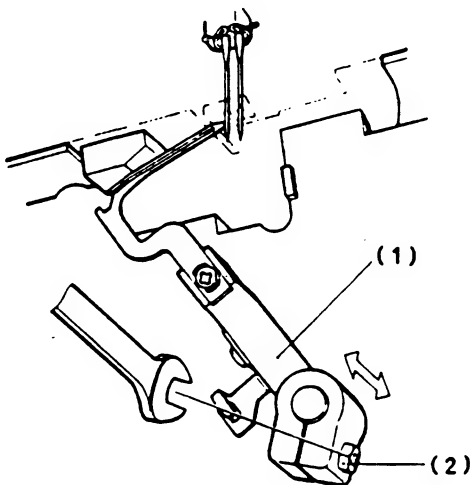
**Standard dimension:** 0 - 0.1 mm



NOTE: Check left needle first then check right needle clearance.  
Check needle bar twist adjustment.

### Adjustment:

1. Under checking condition, loosen bolt (2) on lower looper support arm (1).
2. Keeping the set angle, make axlewise adjustment of support arm (1).
3. Tighten bolt (2) after adjustment.



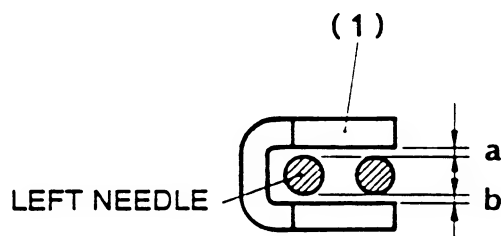
## NEEDLE RECEIVER POSITION

### Checking:

1. Move needle to its lowest position.

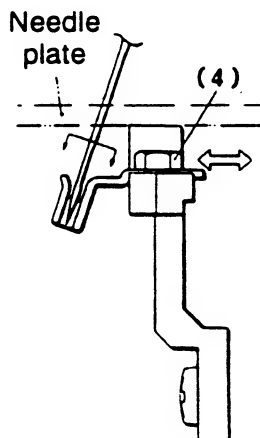
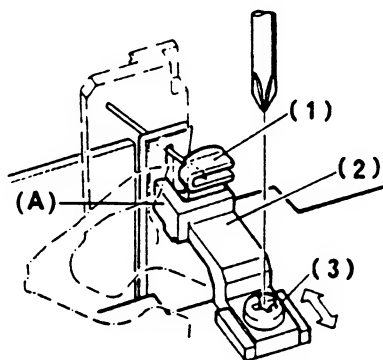
Standard dimension: a - .4

b - .6



### Adjustment:

1. Loosen screw (3) on needle bracket (2), push up/down arm (A) against under surface of needle plate, and tighten screw (3).
2. Remove needle plate. Loosen screw (4) on needle receiver, adjust position of receiver, and tighten screw (4).

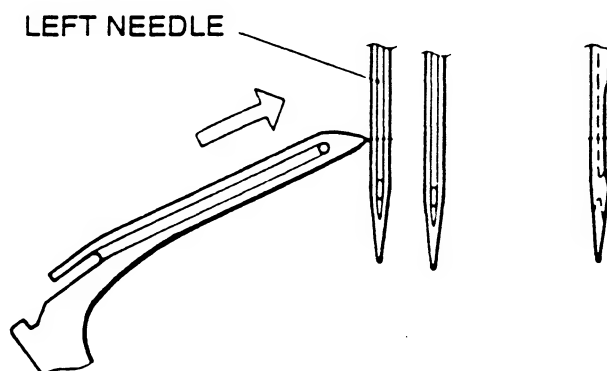


## NEEDLE AND LOWER LOOPER TIMING

Before proceeding, check needle distance to lower looper point according to page 16.

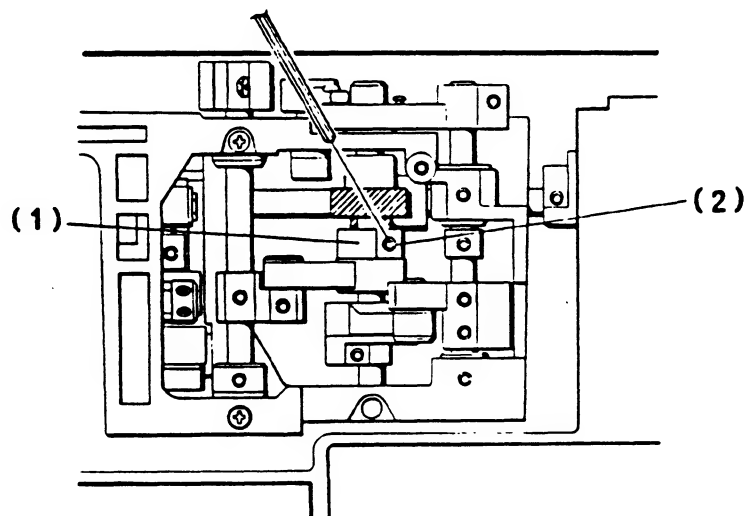
### Checking:

1. Turning hand wheel manually, move lower looper point to align with left side of left needle.
2. At this point, check if looper point comes in the center of the cut on the back of needle.



### Adjustment:

1. Remove base cover.
2. Loosen 2 screws (2) on eccentric cam (1).
3. Adjust set angle of cam (1) to obtain correct timing.
4. Tighten 2 screws (2) after adjustment.



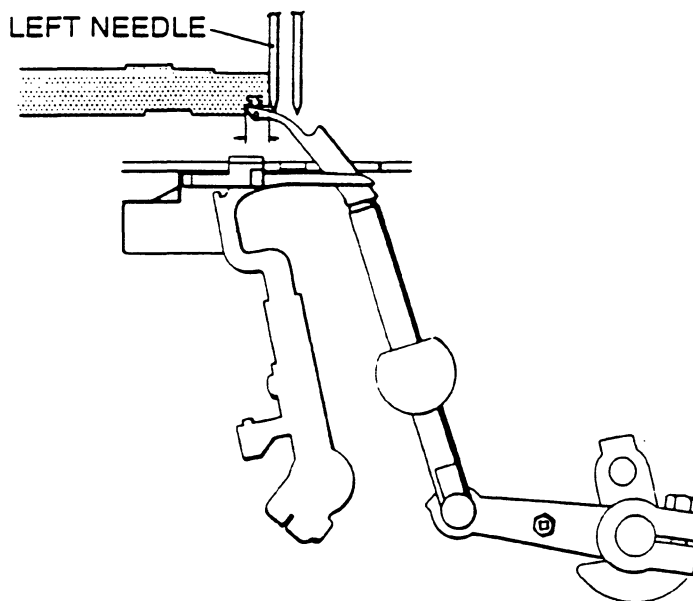
## NEEDLE DISTANCE TO UPPER LOOPER POINT

\* The checking must be carried out on the left needle.

### Checking:

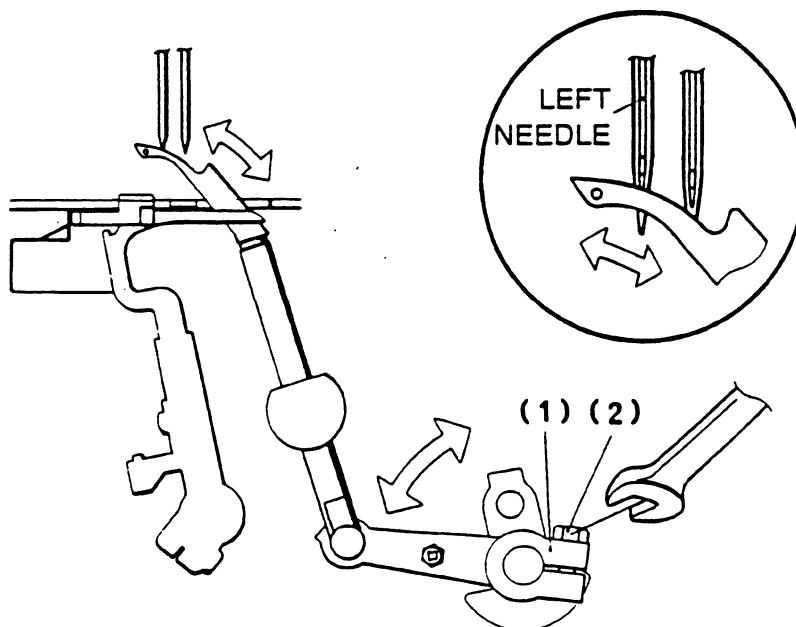
1. Turning hand wheel, move upper looper to its extreme left end position.
2. Using part ⑥ 5.5 of multi-gauge, check the needle distance to the looper point.

Standard dimension: 5.5 mm



### Adjustment:

1. Remove front cover.
2. Loosen bolt (2) on support arm (1).
3. Adjust set angle of the arm (1) to the standard.
4. Tighten bolt (2) after adjustment.

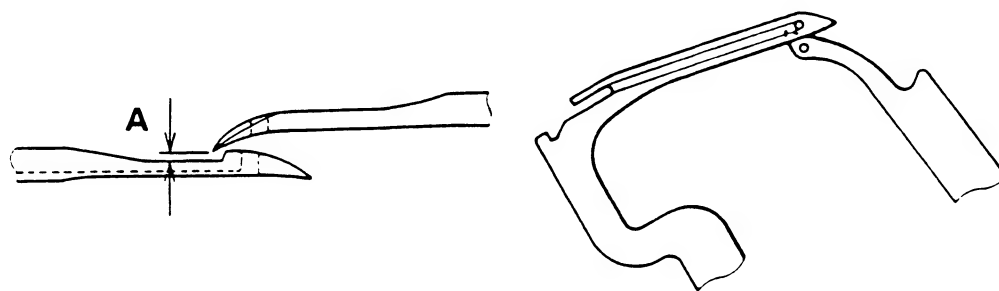


## CLEARANCE BETWEEN UPPER AND LOWER LOOPERS

### Checking:

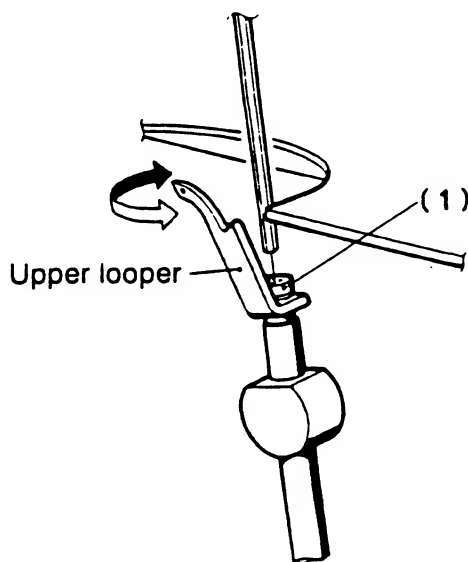
1. Turning hand wheel, bring upper looper point to the close proximity to lower looper.
2. Check clearance A between upper and lower looper.

**Standard dimension:**  $A = 0 - 0.1 \text{ mm}$



### Adjustment:

1. Remove presser foot and needle plate.
2. Loosen screw (1) on upper looper.
3. Adjust set angle of upper looper to obtain standard clearance A between two loopers.
4. Tighten screw (1) after adjustment.

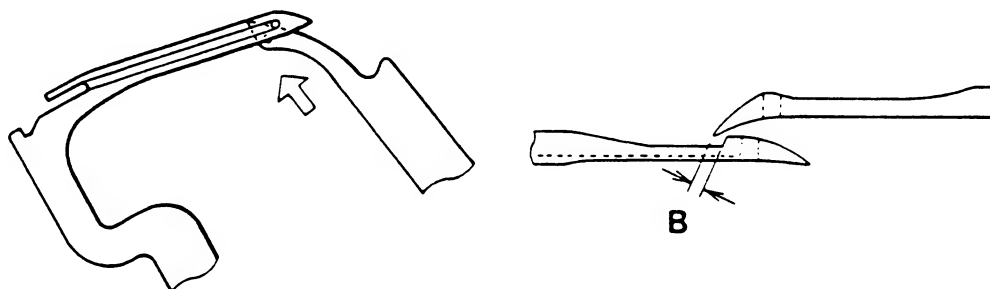


## UPPER LOOPER TIMING

### Checking:

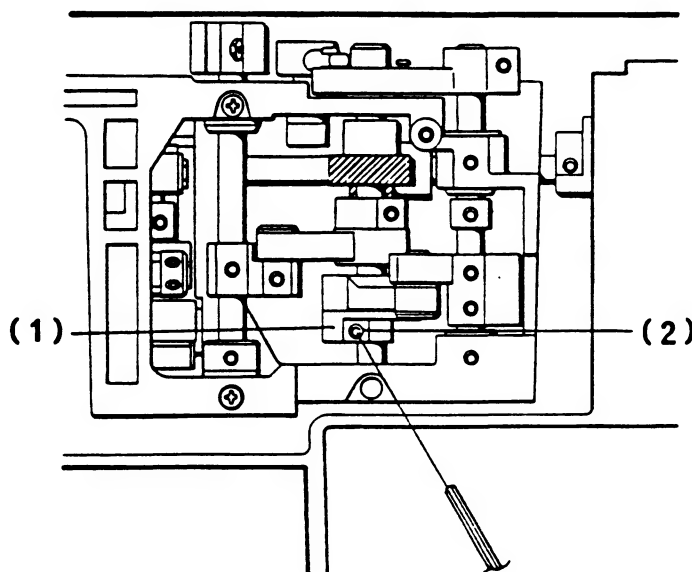
1. Turning hand wheel, bring upper looper point to align with upper edge of lower looper.
2. Check clearance B between upper and lower loopers as viewed in arrow direction.

**Standard dimension:**  $B = 0.5 - 1.5 \text{ mm}$



### Adjustment:

1. Remove base cover.
2. Loosen 2 screws (2) on eccentric cam (1).
3. Adjust set angle of cam (1) to obtain standard clearance.
4. Tighten 2 screws (2) after adjustment.

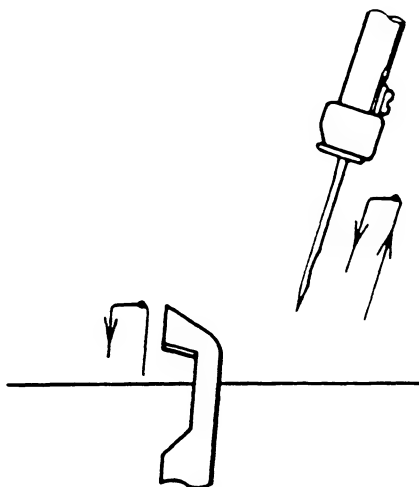




## UPPER CUTTER TIMING

### Checking:

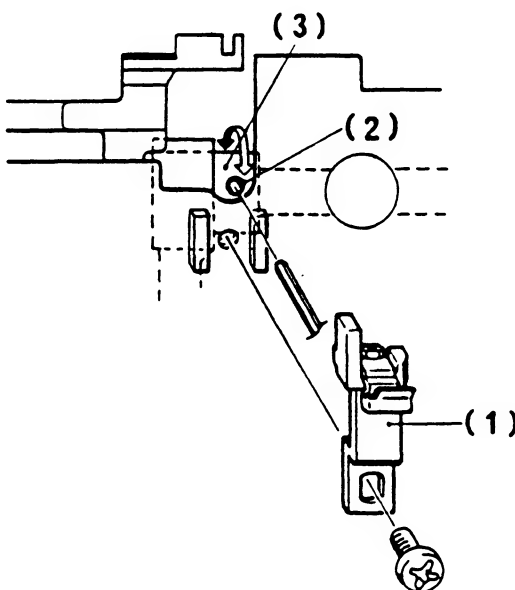
1. Turning hand wheel manually, observe moment of needle and upper cutter, if they are synchronized.
2. When needle starts its down stroke, so does upper cutter.



### Adjustment:

1. Remove needle receiver bracket (1).
2. Loosen 2 screws (2) on eccentric cam (3).
- \*\* Left side cam is for the upper cutter. \*\*
3. Adjust set angle of cam (3) to obtain correct timing.
4. Tighten screws (2) positively after adjustment.

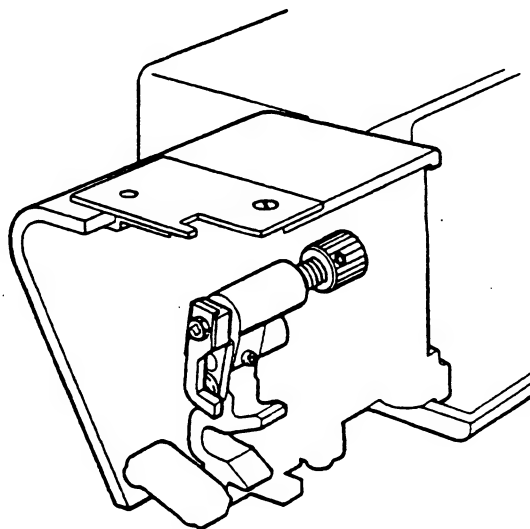
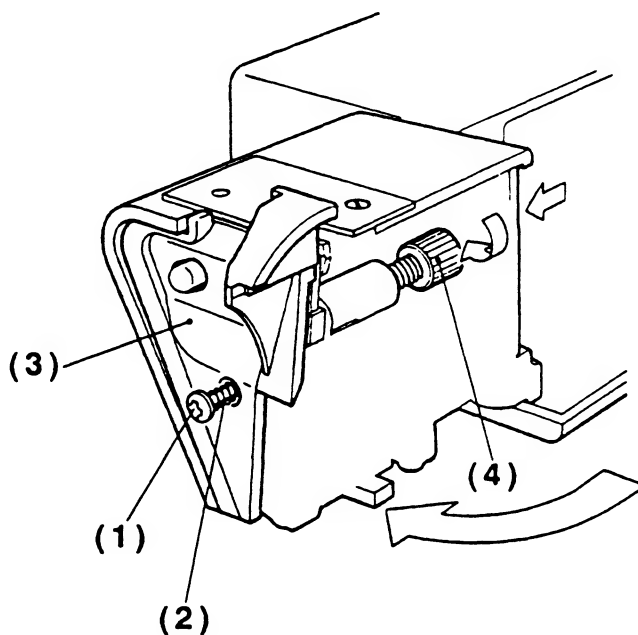
\*\*\* After adjustment, check needle receiver position.



## REPLACING CUTTERS

### Preparations:

1. Open side cover (cutting unit block).
2. Remove screw (1) with spring (2) and take off side plate (3).
3. Disengage the moving cutter by pushing the cutter release knob (4) to the left and turning it towards you.



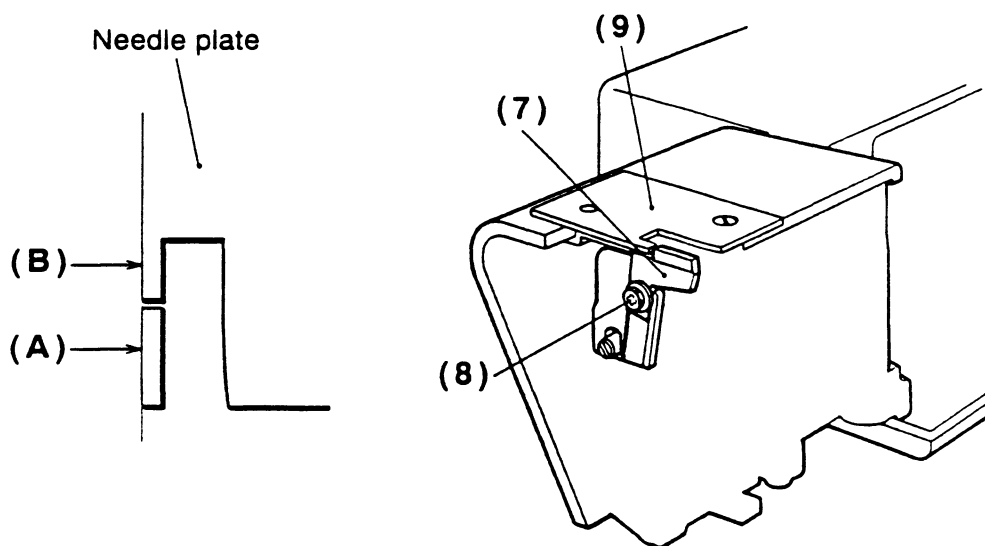
## REPLACEMENT OF CUTTERS CONT'D

### Replacing Lower Cutter:

1. Set overedge cutting width dial at "5".
2. Remove screw (8) and replace lower cutter (7).
3. Set new cutter (7) temporarily with screw (8).

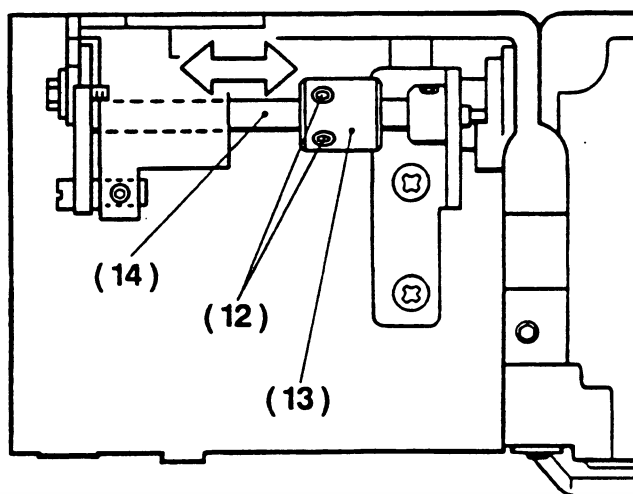
### Checking (1):

1. Check and see if sides of lower cutter (A) and needle plate (B) come in alignment as illustrated.



### Adjustment (2):

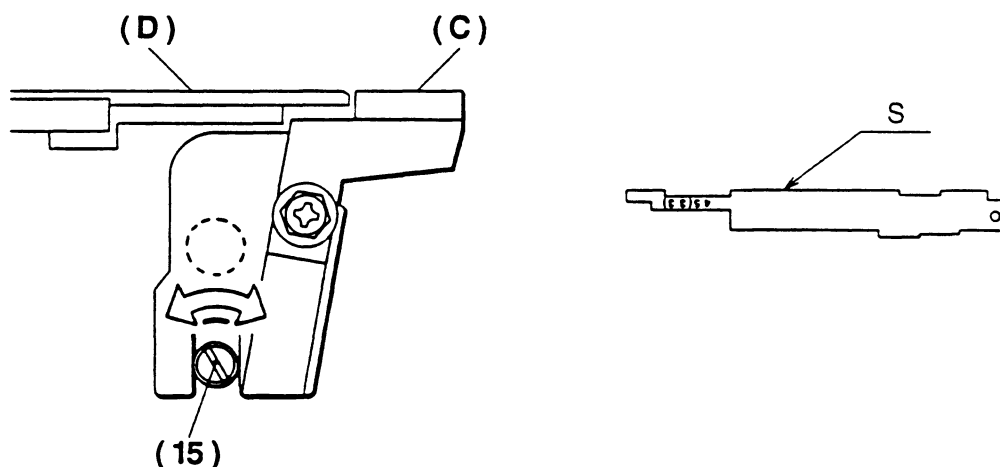
1. If not, loosen 2 screws (12) on collar (13) and adjust shaft (14) in either way until (A) and (B) come in alignment.
2. After adjustment, tighten 2 screw (12) securely.



## REPLACEMENT OF CUTTERS CONT'D

### Checking (2):

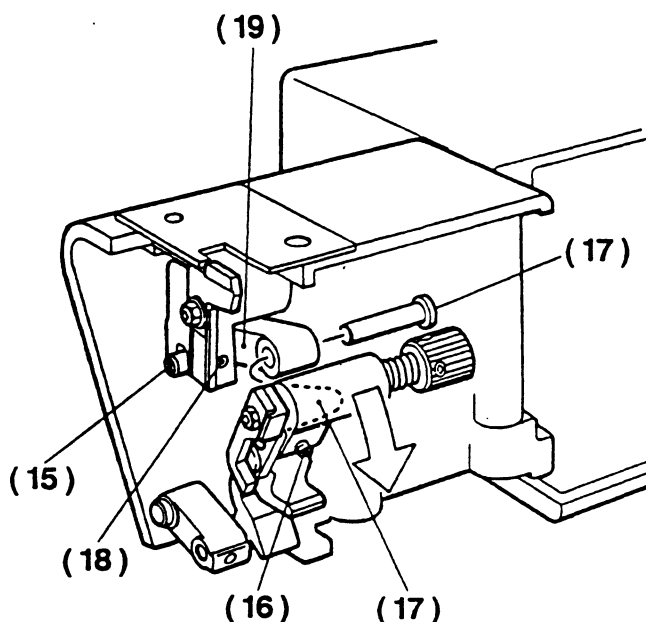
1. Check and see if the blade of lower cutter (C) is parallel with upper surface of needle plate (D).  
Use part S of multi-gauge for the purpose, as illustrated.



### Adjustment (2):

If they are not in good alignment, loosen screw (16) on upper cutter supporting rod unit (E).

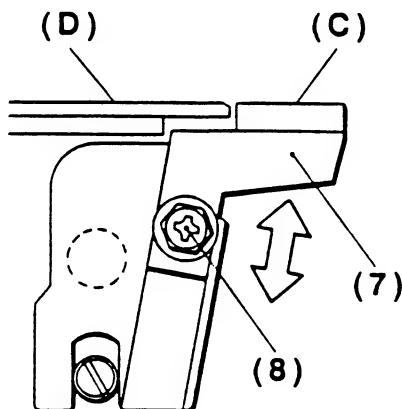
Remove headed pin (17) so that the unit (E) can be disengaged from crank arm (19), and then loosen screw (18). Turn eccentric pin (15) in either direction to obtain parallel alignment of lower cutter blade (C) and needle plate surface (D).



**REPLACEMENT OF CUTTERS CONT'D****Checking & Adjustment (3):**

Loosen screw (8) of lower cutter (7), and adjust cutter position up or down so that its blade (C) comes to level off with upper surface of needle plate (D).

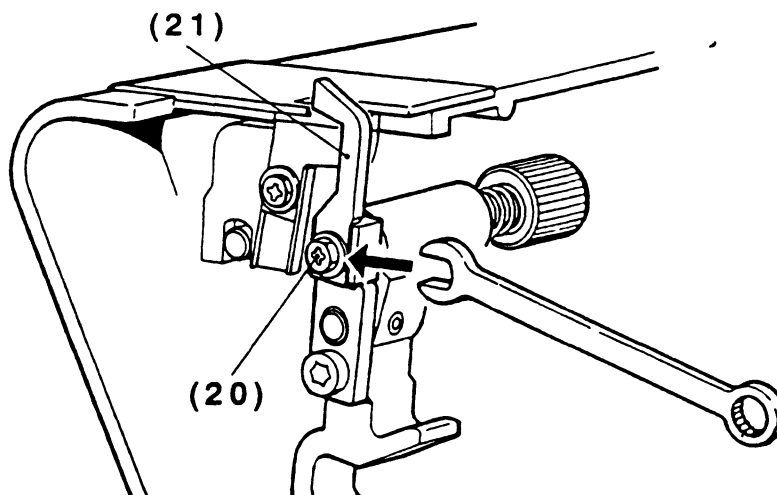
Tighten screw (8) securely after adjustment.



## REPLACEMENT OF CUTTERS CONT'D

### Replacing Upper Cutter:

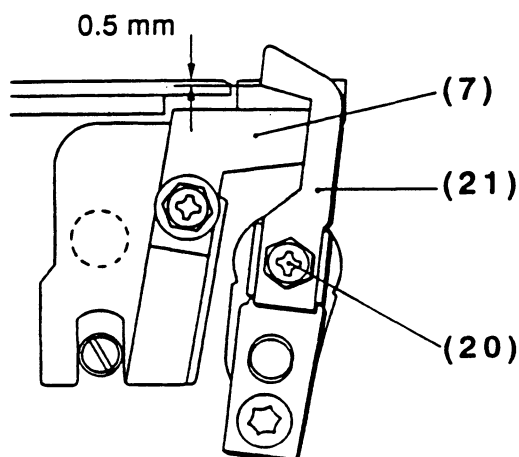
1. See preparation in page 25.
2. Remove bolt (20) of upper cutter (21) with spanner and replace upper cutter (21) with new one.
3. Tighten bolt (20) securely after replacement.



### Checking after replacement:

1. Close side cover (cutting unit block) to the machine, and bring upper cutter (21) to its lower position by turning hand wheel by hand.
2. Check and see if blades of lower cutter (7) and upper cutter (21) overlap by 0.5 mm as illustrated.

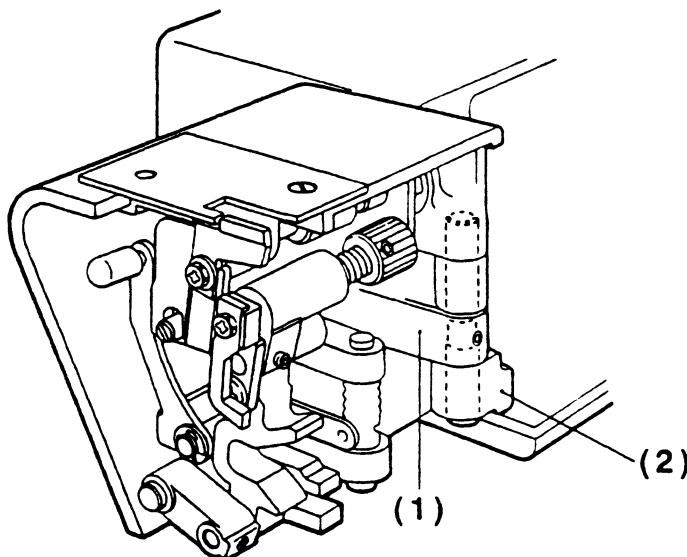
If not, loosen bolt (20) and adjust vertical position of upper cutter (21). Tighten bolt (20) securely after adjustment.



## POSITIONING OF CUTTING UNIT

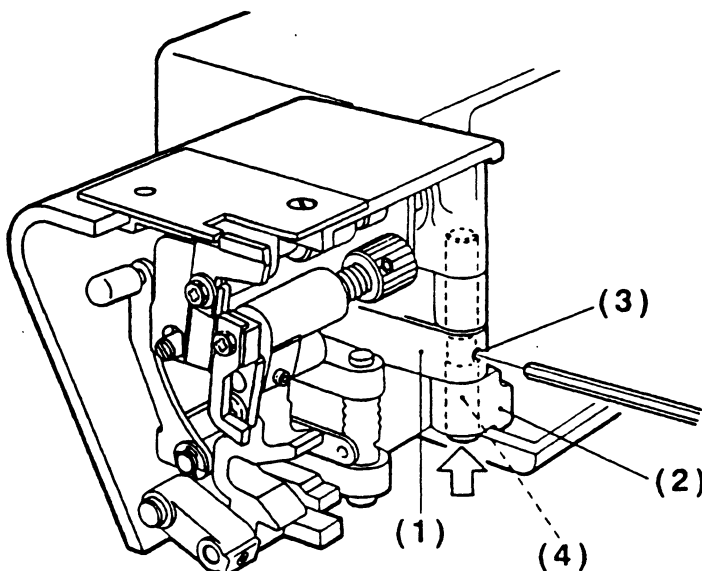
### Checking:

1. Check and see if there is any vertical play among hinge bushing (1) of side cover (cutting unit block) and those of bed frame (2).



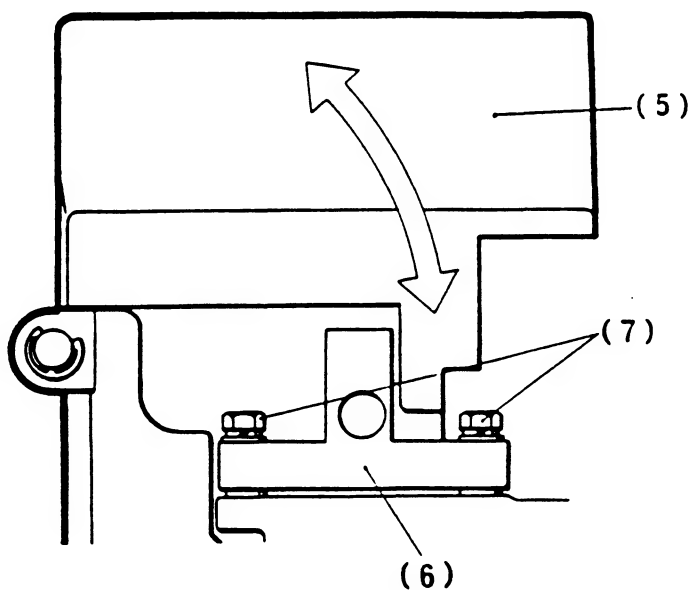
### Adjustment:

1. Loosen screw (3).
2. While pressing hinge bushing (1) of cutting unit against bushings (2) of bed frame and pushing up spindle (4) at the same time, tighten screw (3) temporarily.
3. Tighten up screw (3) only when there is no vertical play among hinge bushing of side cover and those of bed frame.



**POSITIONING OF CUTTING UNIT CONT'D**

4. Loosen 2 bolts (7) of positioning block (6) for side cover (5).
5. Close side cover (5).
6. Under this condition, secure positioning block (6) by tightening 2 bolts (7).
7. Check smooth function of side cover when opening and closing.



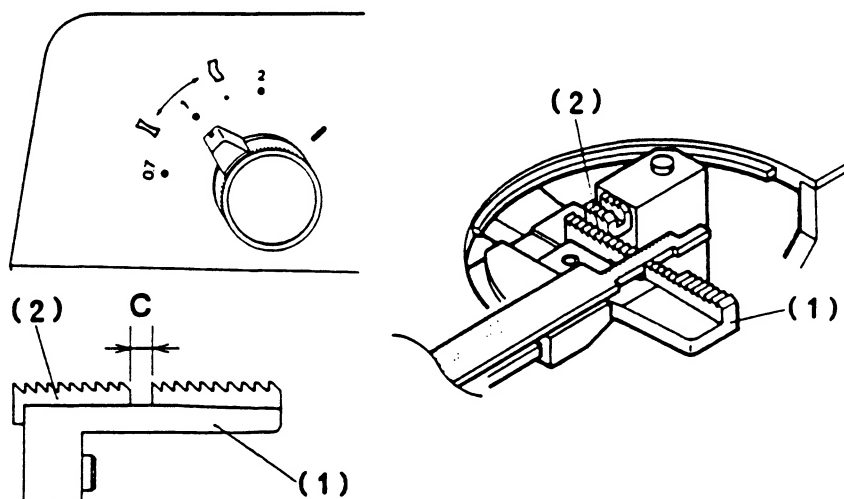


## CLEARANCE BETWEEN FRONT FEED DOG AND REAR FEED DOG

### Checking:

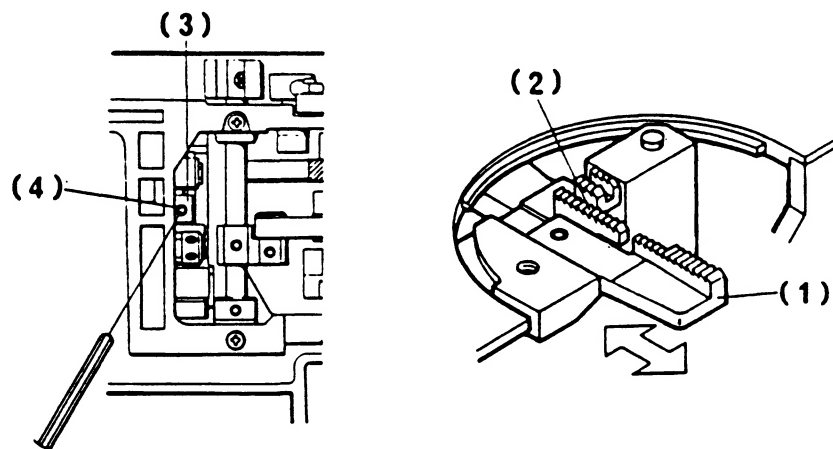
1. Remove needle plate.
2. Set differential feed control lever at "1".
3. Observe clearance C between front feed dog and rear feed dog part ⑦ 3.3 of multi-gauge.

**Standard dimension:** C = 3.3 mm



### Adjustment:

1. Remove base cover.
2. Loosen screw (4) on feed dog holder (3).
3. Adjust by moving front feed dog so that clearance between front feed dog and rear feed dog is 3.3 mm.
4. Tighten screw (4) after adjustment.



## OSCILLATING THREAD GUIDE POSITION

### Checking:

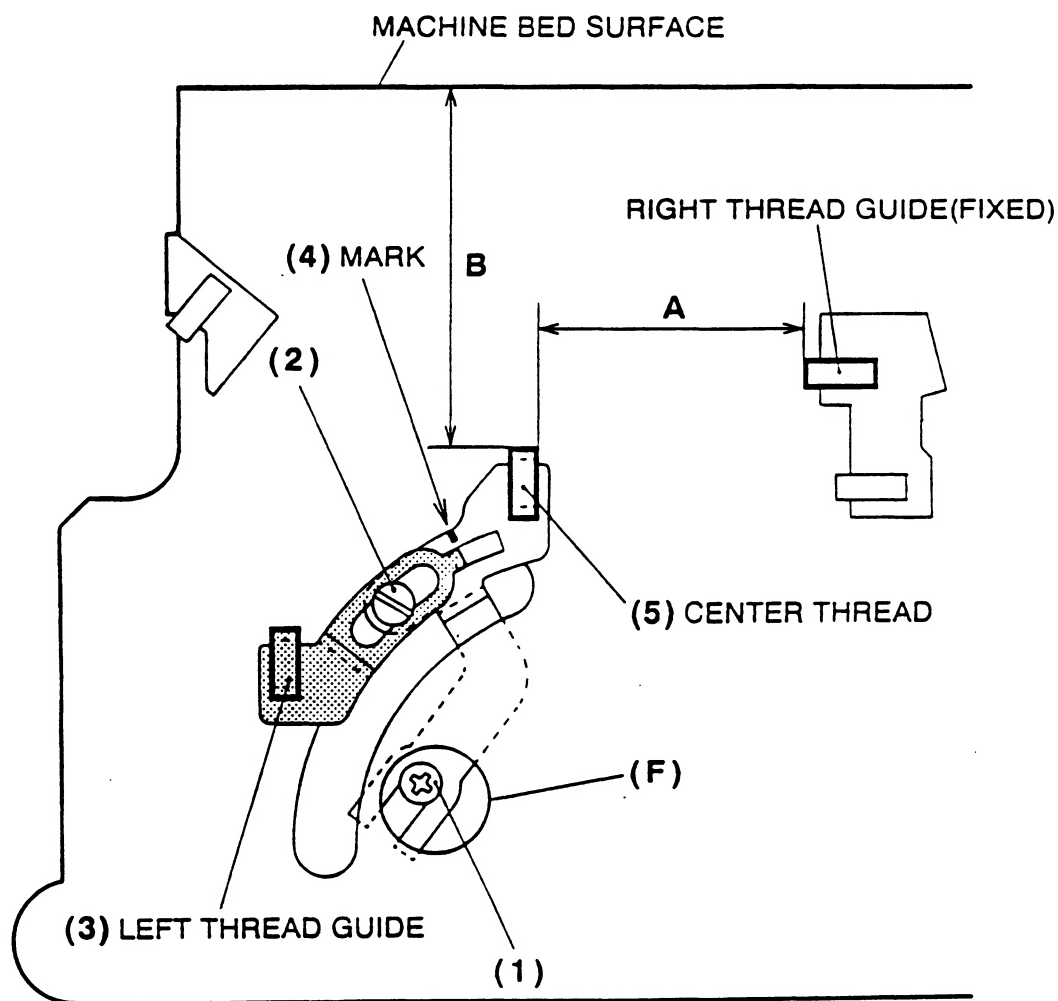
1. Turning handwheel, move upper looper to its extreme left end position.  
Check if the dimension of A and B are within standard.

**Standard dimension:**  $A \approx 31 \text{ mm}$        $B \approx 40 \text{ mm}$

2. Check if right end portion of left thread guide(3) is aligned with the mark(4) on center thread guide(5).

### Adjustment:

1. Remove rubber cap from operating hole (F).
2. Loosen screw(1) and adjust the center thread guide(5).
3. Loosen screw(2) and adjust left thread guide(3).
4. After adjustment, sew and check if thread tension balance is satisfactory.  
If not, adjust-left thread guide(3) in either direction.



## ADJUSTMENT OF THREAD TENSION REGULATORS

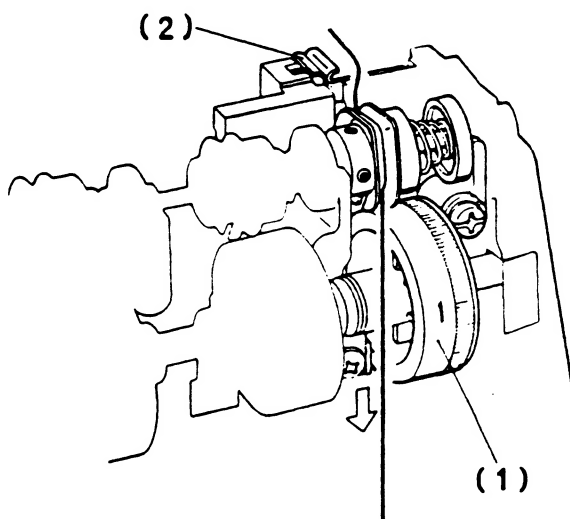
### Checking:

1. Set all tension dials (1) at "1" and remove top cover taking care not to turn dials.
2. Measure tension amount of each dial without threading tension plates (2).  
**Use silk thread #50.**

**Standard tensions of all dials: 5~15 gr.**

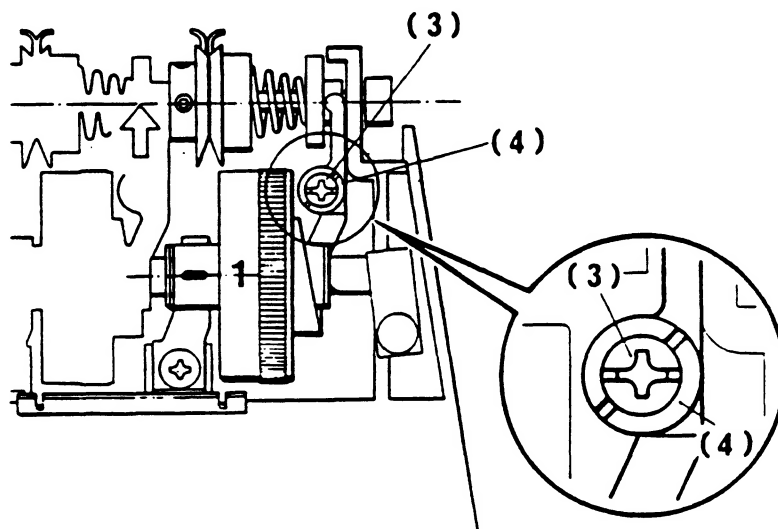
AT「0」—— 0 gr.

AT「1」—— 5 ~ 15 gr.



### Adjustment:

1. Loosen screw (3).
2. Adjust tensions by turning eccentric sleeve (4).
3. Tighten screw (3) taking care not to turn eccentric sleeve.
4. Recheck tensions.



# CONNECTION DIAGRAM

## WIRING TO TERMINAL BLOCK

M ; Motor

S ; Switch

L ; Lamp

